

# National Economic Accounting System in China and Its Application in Business

Yan LI<sup>1</sup>, Xiaoyi Gao<sup>2\*</sup>, Xiaowu Wang<sup>3</sup>

<sup>1</sup>Sichuan University of Culture and Arts, Mianyang, 621000 Sichuan, China

<sup>2</sup>University of New South Wales, Sydney Nsw, Australia

<sup>3</sup>School of International Education, Nanchang University, Nanchang, 330000 Jiangxi, China

\*Corresponding Author

**Keywords:** Green GDP, National economic accounting, Modern information system, Enterprise application

**Abstract:** China's national economic accounting system, which includes certain accounting standards and norms, is an activity of the National Bureau of Statistics that uses scientific theory and professional methods to conduct comprehensive accounting of social reproduction. The national economy is analysed, calculated and synthesized based on relevant data. Various national economic accounting tables are prepared to summarise the country's operation in a certain period, supporting economic decision-making. Basic accounting is the core content of the federal financial accounting system. Authenticity and accuracy of enterprise financial accounting data are essential for the enterprise. Only in this way can the data provided by enterprises to the statistics bureau, taxation bureau and other government departments have research value and make the foundation of the national economic accounting system more solid. When establishing green GDP, enterprises should comply with laws and regulations and integrate accounting and statistics. The enterprise should also apply information technology to its practical work and consider the negative affect of resource consumption. Realize the concept of sustainable corporate development.

## 1. Introduction

National economic accounting is required to study macroscopic social and economic activities. In the published statements of China's national economic accounting system, gross domestic product (GDP) occupies a central position. GDP is the market value of all final goods or services produced by the country in a certain period using factors of production. GDP has three forms of expression: value, income, and product. The main national economic accounting methods are the production, income, and expenditure methods. Businesses often use the income method to account for GDP, the sum of all enterprise revenues in a certain period, including labour compensation, net production taxes, depreciation of fixed assets and operating surplus. While the GDP indicator is not perfect and does not measure the size of an economy or society's economic and social well-being, high GDP can help us live well.

## 2. Background of the System of National Economic Accounting in China

### 2.1 Green and Low Carbon

After decades of rapid reform development and opening up, China's economic scale and social wealth have expanded. In the past, the impact of economic development on the environment was relatively small. Still, with the increasing consumption of resources, GDP growth has produced a certain degree of damage to the environment; the issue of environmental costs and the reduction of natural resources is a problem that we cannot avoid in national economic accounting. China is now aware of the need to consider environmental considerations in its national economic accounting and is considering deducting from GDP the cost of resource consumption and the cost of protecting and

restoring the environment, resulting in a “green GDP” that takes environmental considerations into account.

Green GDP =	GDP - the cost of resource consumption - the cost of environmental damage
-------------	---

Fig.1 Green Gdp Formula Table

The national economic accounting should consider the information of total carbon emission, industrial production process carbon emission, energy type emission, waste. The national economic accounting system extends the physical accounting of natural resources to resource and environmental accounting, reflecting the openness and foresight of China's national financial accounting system. The initial implementation of China's unified accounting system in 2020 is conducive to green GDP accounting. It ensures the convergence of the overall national economic accounting system with the accounting results of micro-economic entities.

## 2.2 Deep Integration of National Economy and Modern Information Technology

In 2012, the China Computer Society and the China Communications Society established expert committees on big data. China attaches importance to the study of contemporary information technology and notes the great supporting role of information technology and big data for national economic accounting.

Initially, Big Data refers to a massive collection of data that cannot be captured, managed and processed quickly, and has evolved to break through the limitations of space and time to process and analyse a large range of data in a very short period [1]. Big data has the characteristics of “volume”, “variety”, “value” and “speed”. When combined with big data and cloud computing, it is possible to integrate resources from disparate locations, fully utilize data in databases, extract valuable information, and generate relevant new data. For example, procurement in the medical industry in national accounting is an example of using modern information technology in the national economy. The procurement data needs to be logged into the official platform page, which facilitates the extraction and analysis of data at a later stage. From the perspective of the national economic accounting system, it is the application of new technologies such as Internet-based big data and cloud computing to economic life, adapting to the trend of the times of rapid development of information technology.

## 2.3 Digital Economy Development

With the development of the Internet, the Internet of Things and big data, the scale of my country's digital economy has continued to expand, and the forms of the digital economy have become more diversified. Improving the national economic accounting system needs to take into account the development of the digital economy. Because the digital economy makes use of production factors, contributes to the total national economy, achieves a certain income, and profoundly affects the production, consumption and circulation market pattern. Thanks to the research and use of big national data and a significant increase in statistical efficiency, the country has expanded the scope of assets in the national economic accounting system to include intellectual property products in the accounting of non-financial assets. The introduction of the concept of intellectual property products is in line with the background of the rapid development of China's digital economy.

In 2016, the G20 Summit defined the digital economy as a series of economic activities that take digital information as the key production factor, use the information network as the platform, and use communication technology as a series of economic activities to optimize the economic structure and improve efficiency. In recent years, the proportion of the digital economy in the national economic system has grown at an average rate of 1.4 percentage points per year. The higher the level of development of the digital economy, the better the country's economic benefits [2].

## 3. Content of National Economic Accounting

In order to be consistent with the new national economic accounting system and facilitate comparison with other national economies, my country's national financial accounting system has been revised accordingly to keep the statistical items and calibers consistent. The information published in China's national economic accounting mainly includes four statements: GDP, capital flow statement, the balance of payments statement and balance sheet. After the adjustment, there are no longer separate national economic accounts, and these basic accounting statements cover all the content previously available in the federal financial reports. This format adjustment makes the content presentation simpler and easier to understand, facilitating further data processing and sharing between tax and statistical authorities. The GDP tables reflect the maximum amount of information on the development of the national economy, its total volume, industrial distribution, and percentages and occupy a central position in the national economic accounting system.

#### 4. Enterprise Implementation Level

##### 4.1 The Basis of National Economic Accounting is Enterprises

The main indicator of the national accounts is gross domestic product (GDP), and GDP data comes from information provided by enterprises and grass-roots sectors. The authenticity and accuracy of corporate information affects the quality of national accounts. Many of the data of national economic accounting come from the accounting department of the enterprise. Accounting is the use of money as a unit of measurement. It considers business operations from the point of view of value quantities and uses specialized methods to account for and monitor the enterprise's economic activities systematically. It is a financial management activity whose main purpose is providing economic information, improving economic efficiency, and providing useful information to relevant users externally. The sum of each enterprise's income, including workers' compensation, net production taxes, depreciation of fixed assets and operating surplus, can be linked to the country's GDP accounting after the data has been compiled and processed. To ensure more accurate national economic accounting data from corporate information and thus protect the rights and interests of employees, corporate management must pay attention to regulating the purchase of insurance and provident funds for employees. Enterprises provide various other forms of benefits and compensation for employees, etc. Less purchase of employee insurance to obtain operating surplus and corporate income is inaccurate and is bound to affect the value of national economic accounting in the future.

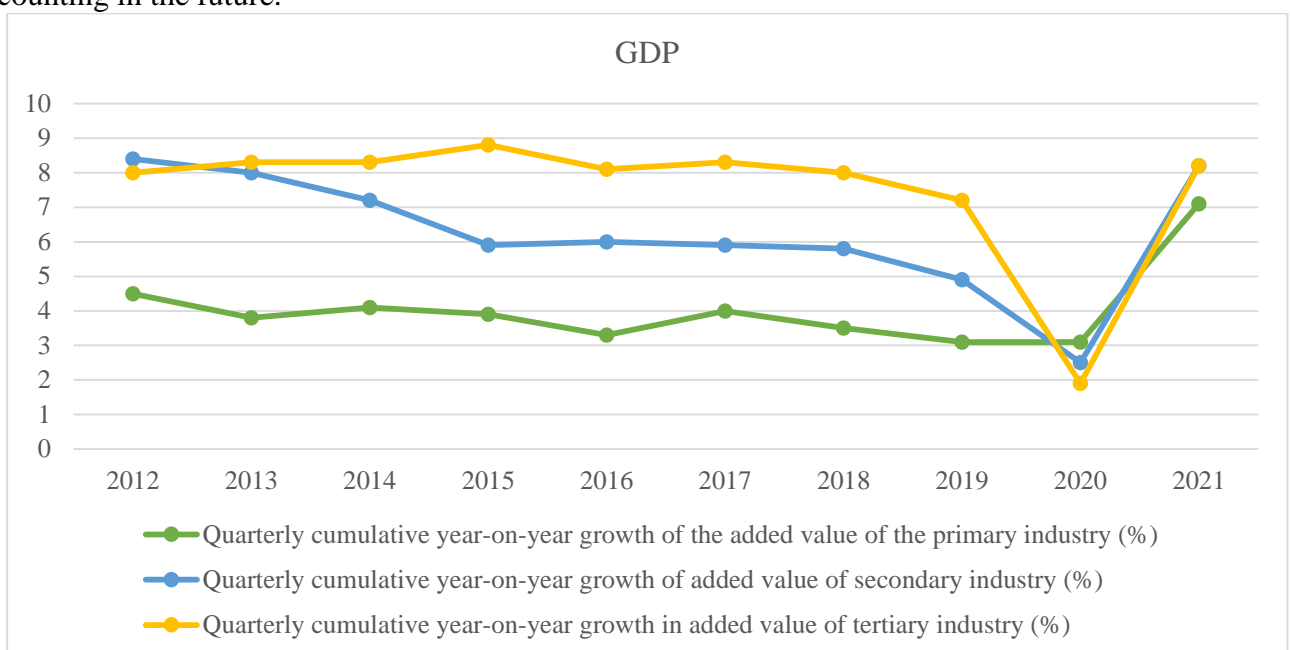


Fig.2 Cumulative Quarter-on-Quarter Gdp Growth

According to the data from the National Bureau of Statistics of China, the cumulative quarterly growth of the added value of the primary industry in 2012 was 4.5% year-on-year. By the end of 2020, the cumulative quarterly growth of the added value of the primary industry dropped to 3.1%. In 2021, the cumulative quarterly growth of the added value of the secondary and tertiary industries will reach 8.2% year-on-year. National economic accounting is the accounting of all production and business activities of all enterprises, institutions and social organizations and the calculation and analysis of the funds obtained in a certain period. The information obtained from enterprises is classified, organized, calculated and analysed by the National Statistical Office to depict the overall economic accounting framework of the country. National economic accounting aims to grasp economic operation and structure, present real data on regional economic development and provide supporting materials for economic decision-making.

#### **4.2 Consolidate Accounting Work and Integrate with Statistics**

Accounting is an important business department, and management should have a monitoring mechanism. It is not only the mutual supervision of the personnel within the accounting department but also the supervision of the work of the accounting department within the enterprise. In accounting, gross output volume, value-added, labour compensation, profit, tax, etc., affect the income value, and the corresponding GDP value can be obtained by calculation and collation. The authenticity of information records is the only way to provide the foundation for national economic accounting. Of course, the scope of national economic accounting is broader than that of enterprises. In addition to monetary measurement, there are physical measurement.

With the development of information technology, the accounting will apply more complex statistical measurement methods. Accounting and statistics are two languages that respond to, record, and count economic activity from different perspectives. Statistics provides a more scientific approach to data collection, extraction, calculation and analysis for accounting. Unifying the meaning of indicators, caliber and unit of measurement of statistical and accounting objects is conducive to sharing resources and improving the consistency and coordination of accounting work. The in-depth cooperation between accounting and statistics is fully in line with the concept of combining the national economic accounting system and information technology advocated by the state.

In practice, the accounting work of enterprises involves a lot of accounting work about income and expenses, and there is much docking with local taxation bureaus and statistical bureaus. Enterprise accounting should solidify the accounting foundation and improve accounting methods. Strengthen accounting supervision, take the actual occurrence of real economic activities as the object of accounting, ensure the correct accounting of depreciation and expenses to be amortized, avoid malpractices such as inflating income and overstating expenses, and strictly comply with the accounting system. The government department will collate and account for the main economic indicators of the industry based on the collected statistics, financial statements, and administrative records, supplemented by the necessary one-time surveys and key surveys<sup>[3]</sup>.

In the actual work of the enterprise, to ensure that the accounting and the state maintain consistency, it must comply with financial regulations, and the money collected must be recorded by the provisions of the accounts. Shall not be directly from the unit's cash receipts for cash expenses. The transaction data from the enterprise's real income and expenditure norms is true, and the national economic accounting system of funds flow statement data will be more accurate.

In addition, the workforce sector and others will have a lot of information about the age, gender and number of workers. The national economy is the market value of all final goods (products and services) produced by the country in a certain period using factors of production. But the national economy accounting system and the information on the number and distribution of the population will give a clearer picture of the national average value of people.

As a result, in addition to the accounting department, the human resources department and the procurement department must perform their duties for the country's macro-national economic accounting. Specifically, the human resources department fills in the correct information about the

number, age and gender of the employees in the enterprise to the relevant departments. When the purchasing department uses the modern computer office, the unit price, quantity and other information of the purchased items are correctly entered to ensure the authenticity and integrity of the data. At the same time, the realization of information sharing within the enterprise, improvement of accounting efficiency, and non-repetitive accounting of the value of the same product require the cooperation of the accounting department, relevant purchasing departments and other departments involved in statistical accounting. Work. The name, measurement specification and unit of the product are unified in their respective accounting to realize data extraction and direct use.

### **4.3 Implementation of Green Accounting**

The national economic accounting involves “net production tax,” which refers to the various taxes levied by the government on production units engaged in production, sales and business activities and on the use of certain factors of production for such activities, including taxes related to the environment. Previously, businesses were only concerned with increasing GDP in their economic accounting and had no concept of environmental protection. Specifically, we should advocate the idea of green GDP in the accounting of enterprises and include the carbon emissions of living and operating activities in the corresponding accounting accounts to arrive at the real profit after considering the environmental costs and losses in line with the new concept of national economic accounting<sup>[4]</sup>. In practice, GDP and income are closely related to each other. Still, accounting only focuses on increasing or decreasing money, unilaterally pursuing rapid development without paying attention to the environmental impact. The result of companies' lack of awareness of environmental protection, in turn, hinders their growth.

For example, many companies have to limit electricity production for a few days during the summer, which is a natural reaction to the long-standing high energy consumption and crude economic development at the cost of the environment. Enterprises should keep reasonable accounts of their economic activities based on fully considering economic externalities. When calculating the value-added rate, environmental and resource losses should be deducted from income, and ecological protection expenditure should be estimated as negative income. For the whole country, the value added to the entire national economy will be closer to the real situation when all enterprises deduct the environmental losses of production and operation. Practical quantitative accounting methods may be used to account for atmospheric emissions. Conversely, value-based strategies can be used to calculate the cost of environmental expenditures. The monetary value estimate of the current depletion of natural resources and ecological degradation this item adjusts for the portion of lack of natural resources and environmental degradation that is not accounted for in the traditional national economic accounting<sup>[5]</sup>.

The Environmental Protection Tax Law, implemented in China in 2018, requires companies to file environmental tax returns. The purpose is to improve air quality and promote sustainable green economic development. Enterprises should truthfully report the type, quantity and concentration value of taxable pollutants emitted to tax authorities and calculate the correct taxable amount based on pollutant emissions. With the construction of an information technology network, environmental protection departments, taxation departments, etc., can also share information, so the declared information must be true. With the implementation of this regulation, the period of heavy air pollution in 339 cities in China has also decreased from 2,311 days in 2017 to 854 days, thus showing the positive impact of the green national accounting system on the overall environment of China's major cities<sup>[6]</sup>.

### **4.4 Focus on Monthly and Quarterly Statistical Accounting**

The National Bureau of Statistics of China currently accounts for the time dimension of the national economic system, mainly in public years and will improve the quarterly expenditure accounting system of French GDP in the future. In the work of enterprise financial accounting, it should ensure timely data filling, timely correction and timely reporting. For example, in the context of the development of the digital economy, the accounting of corporate intellectual property

and digital economy interests should be strengthened. Treat R&D as fixed assets and adjust R&D expenditures from intermediate inputs to fixed capital expenditures following China's national economic accounting system.

## **5. Conclusion**

To sum up, the new national economic accounting, to fully consider the digital economy, green GDP and other aspects for enterprises to consolidate the accounting infrastructure, strengthen accounting supervision, and obtain the true value of the statements. It is crucial that the management adheres to all the financial regulations of the enterprise, adjusts the statistical units when entering various statistics within the company, and integrates accounting work with other statistical work to achieve information sharing. The data reported by enterprises to the taxation bureau, statistics bureau and other units will eventually be summarized by the National Bureau of Statistics of China, which is the fundamental of China's national economic accounting system.

## **Acknowledgement**

This paper is a general subject of Sichuan Research Center of Electronic Commerce and Modern Logistics, Project Number: DSWL-23, Project Name: Research on Digital Storage Facilities -- Taking Mianyang as an example.

## **References**

- [1] Y.X.Li, "Characteristics and risk analysis of cloud computing and big data". *Electronic technology*, vol.51, no.7, pp.100-101, 2022.
- [2] Y.Y.Wang, "China's digital economic accounting: a test from the perspective of GDP and productivity". *Statistics and decision making*, vol.38, no.6, pp.110-113, 2022.
- [3] W.W.Wang, "Thoughts on industrial economic accounting". *Zhejiang statistics*, no.12, pp.15-17, 2007.
- [4] H.Y.Tian, "Preliminary discussion on the coordination and unification of statistics and accounting". *Statistics and management*, no.6, pp.34+53, 2011.
- [5] M.N.Wang, "Green accounting and green national economic accounting". *Journal of Anhui Vocational and technical college*, no.4 pp.41-44, 2006.
- [6] J.Z.Tong, X.Wen, R.F.Qiu, "Can the collection of environmental protection tax effectively control air pollution? ". *Tax research*, no.8, pp.94-100, 2022.